DETAILED ACTION

The following is an Examiner's Amendment in response to Applicant's Request for Continued Examination and amendment filed August 20, 2009 and interviews held with Mr. Kang Lim (Reg. No. 37,491) on September 2 and 12, 2009. Claims 1-3. 5, 8, 15, 28, and 34-35 are amended and 4 is canceled herein, claims 6, 18, 29 and 30 being previously canceled. Currently claims 1-3, 5, 7-17, 19-28 and 31-40 are pending and allowed below.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 20, 2009 has been entered.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Kang Lim (Reg. No. 37,491) on September 2 and 12, 2009.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in this application.

1.   (Currently Amended) A computerized price optimization system configured to create a promotional event calendar, ~~useful~~ in association with at least one store, the computerized price optimization system comprising:

an econometric engine, executed by a processor, ~~including computer-readable code~~ configured to ~~model sales as a function of price to~~ create a sales model, wherein the econometric engine includes an imputed variable generator for:

imputing base price variable and a promotional variable,

<u>generating an equivalent price and an equivalent unit for each product of the plurality of demand groups using an equivalizing factor, and</u>

wherein the sales model includes the imputed base price variable, <u>the equivalent price, the equivalent unit</u> and the promotional variable;

a financial model engine ~~including computer-readable code~~ configured to ~~model costs to~~ create a cost model; <u>and</u>

a promotional engine coupled to the econometric engine and financial model engine, the promotional engine ~~including computer-readable code~~ configured to<u>:</u>

receive input from the econometric engine and financial model engine;

<u>receive manufacturer conditions from more than one manufacturer, wherein the manufacturer conditions are requirements the more than one manufacturer places on an offer, and the requirements include at least one promotional vehicle requirement;</u>

<u>receive store constraints from at least one store, and wherein the store constraints from the at least one store includes a linear constraint and a nonlinear constraint;</u>

<u>compute a score that links each product with one promotional vehicle type for each offer of a plurality of offers and for each promotional event of a plurality of promotional events, wherein the computing the score independently computes a value of each offer and a value of each promotional event using the sales model and cost model, and wherein each promotional event includes at least one type of promotional vehicle;</u>

<u>select combinations of offers from the plurality of offers, and promotional events from the plurality of promotional events to form a subset of offers and promotional events, wherein the selection of the combination of offers and events is based on the computed scores, the manufacturer conditions and store constraints;</u>

<u>reconcile the type of promotional vehicle associated with each promotional event in the subset with the promotional vehicle requirements for each offer in the subset; and</u>

construct a promotion calendar utilizing the subset of offers and
promotional events, and reconciled type of promotional vehicle and promotional
vehicle requirements wherein the promotion calendar sets the promotion levels of
each product.

wherein the promotional engine analyzes a plurality of offers, a plurality of
promotional events, conditions from more than one manufacturer wherein the conditions
are requirements the more than one manufacturer places on at least one of the plurality
of offers, and constraints from the at least one store to optimally match offers with
promotional events to create a promotional event calendar subject to the conditions
from the more than one manufacturer, and the constraints from the at least one store,
and wherein the constraints from the at least one store includes a linear constraint and
a nonlinear constraint.

2.   (Currently Amended) The system, as recited in claim 1, wherein the promotional
engine further comprises a temporary price reduction optimizing engine including
computer-readable code configured to temporarily reduce prices after the promotional
events and offers have been selected.

3.   (Currently Amended) The system, as recited in claim 2, further comprising a
support tool connected to the promotional engine wherein the support tool including
computer-readable code is configured to receive the promotional event calendar from
the promotional engine and provides a user interface to a client, wherein the user
interface provides the promotional event calendar to the client.

4.   (Cancelled)

5.   (Currently Amended) A computer-implemented method for creating a promotional event calendar, in association with at least one store, the method for creating a promotional event calendar comprising:

creating a sales model, using a processor, for each product and wherein the sales model includes an imputed base price variable, an equivalent price, an equivalent unit and a promotional variable;

creating a cost model;

determining conditions from more than one manufacturer, wherein the conditions are requirements the more than one manufacturer places on an offer, and the requirements include at least one promotional vehicle requirement;

determining store constraints from at least one store, and wherein the store constraints from the at least one store includes a linear constraint and a nonlinear constraint;

~~determining the value of offers using the sales model and cost model;~~

~~determining the value of promotional events using the sales model and cost model; and~~

computing a score that links each product with one promotional vehicle type for each offer of a plurality of offers and for each promotional event of a plurality of promotional events, wherein the computing the score independently computes a value of each offer and a value of each promotional event using the sales model and cost model, and wherein each promotional event includes at least one type of promotional vehicle;

selecting combinations of the offers and promotional events by optimizing ~~the determined values to create a promotion event calendar~~ the computed scores subject to the conditions from the more than one manufacturer and constraints from the at least one store;

reconciling the type of promotional vehicle associated with each promotional event in the subset with the promotional vehicle requirements for each offer in the subset; and

constructing a promotion calendar utilizing the subset of offers and promotional events, and reconciled type of promotional vehicle and promotional vehicle requirements wherein the promotion calendar sets the promotion levels of each product.

6.   (Previously Cancelled)

7.   (Previously Presented) The computer-implemented method, as recited in claim 5, further comprising the step of estimating net profit from the selected combination of offers and promotional events using the sales model and cost model.

8.   (Currently Amended) A computer-implemented method for creating a promotional event calendar, comprising:

creating, using a processor, a sales model, comprising:

creating a plurality of demand groups, wherein each demand group is a set of at least one product and wherein at least one of the demand groups is a set of at least two products;

generating an equivalent price and an ~~equivalized~~ equivalent unit for each product of the plurality of demand groups using an equivalizing factor;

creating a sales model for each demand group and wherein the sales model for each demand group includes an imputed base price variable, the equivalent price, the equivalent unit and a promotional variable; and

creating a market share model for each product in each demand group;

creating a cost model;

determining conditions from more than manufacturer, wherein the conditions are requirements the more than one manufacturer places on an offer, and the requirements include at least one promotional vehicle requirement;

determining store constraints from at least one store, and wherein the store constraints from the at least one store includes a linear constraint and a nonlinear constraint;

~~determining the value of the offers using the sales model and cost model;~~

~~determining the value of promotional events using the sales model and cost model;~~

computing a score that links each product with one promotional vehicle type for each offer of a plurality of offers and for each promotional event of a plurality of promotional events, wherein the computing the score independently computes a value of each offer and a value of each promotional event using the sales model and cost model, and wherein each promotional event includes at least one type of promotional vehicle;

selecting combinations of offers and promotional events to form a subset of offers and promotional events by optimizing ~~the determined values to create a promotion event calendar~~ the computed scores subject to the conditions from the more than one manufacturer and constraints from the at least one store;

reconciling the type of promotional vehicle associated with each promotional event in the subset with the promotional vehicle requirements for each offer in the subset; ~~and~~

estimating net profit from the selected combination of offers and promotional events using the sales model and cost model; and

construct a promotion calendar utilizing the subset of offers and promotional
events, and reconciled type of promotional vehicle and promotional vehicle
requirements wherein the promotion calendar sets the promotion levels of each product.

9.   (Previously Presented) The system as recited in claim 1, wherein the constraints
from the at least one store include at least one of ad space capacity and display space
capacity.

10.   (Previously Presented) The system as recited in claim 1, wherein the constraints
from the at least one store include at least one of an event type, a number of events, a
brand promotion frequency, and a product promotion frequency.

11.   (Previously Presented) The computer-implemented method as recited in claim 5,
wherein the constraints from the at least one store include at least one of ad space
capacity and display space capacity.

12.   (Previously Presented) The computer-implemented method as recited in claim 5,
wherein the constraints from the at least one store include at least one of an event type,
a number of events, a brand promotion frequency, and a product promotion frequency.

13.   (Previously Presented) The computer-implemented method as recited in claim 8,
wherein the constraints from the at least one store include at least one of ad space
capacity and display space capacity.

14.   (Previously Presented) The computer-implemented method as recited in claim 8, wherein the constraints from the at least one store include at least one of an event type, a number of events, a brand promotion frequency, and a product promotion frequency.

15.   (Previously Presented) The system as recited in claim 1, wherein the ~~matching~~ selecting of offers with promotional events includes solving an integer problem using the linear constraint and the nonlinear constraint.

16.   (Previously Presented) The computer-implemented method as recited in claim 5, wherein the selection of combinations of offers and promotional events includes solving an integer problem using the linear constraint and the nonlinear constraint.

17.   (Previously Presented) The computer-implemented method as recited in claim 8, wherein the selection of combinations of offers and promotional events includes solving an integer problem using the linear constraint and the nonlinear constraint.

18.   (Previously Cancelled)

19.   (Previously Presented) The system as recited in claim 1, wherein the conditions from the at least one manufacturer include providing at least one of a promotional event and a specific amount of promotion.

20.   (Previously Presented) The system as recited in claim 1, wherein the conditions from the at least one manufacturer include not providing a promotional event for a competitor's product.

21.   (Previously Presented) The computer-implemented method as recited in claim 5, wherein the conditions from the at least one manufacturer include providing at least one of a promotional event and a specific amount of promotion.

22.   (Previously Presented) The computer-implemented method as recited in claim 5, wherein the conditions from the at least one manufacturer include not providing a promotional event for a competitor's product.

23.   (Previously Presented) The computer-implemented method as recited in claim 8, wherein the conditions from the at least one manufacturer include providing at least one of a promotional event and a specific amount of promotion.

24.   (Previously Presented) The computer-implemented method as recited in claim 8, wherein the conditions from the at least one manufacturer include not providing a promotional event for a competitor's product.

25.   (Previously Presented) The system as recited in claim 1, wherein the imputed base price variable is a function of initial base prices.

26.   (Previously Presented) The system as recited in claim 25, wherein the initial base prices are averages of non-promoted prices.

27.   (Previously Presented) The system as recited in claim 1, wherein the econometric engine utilizes Bayesian Shrinkage modeling which relies on a mixed-model methodology of combining data to dampen any extreme values of the data.

28.   (Currently Amended) A computer-implemented method for creating a promotional event calendar, useful in association with at least one store, the computer-implemented method comprising:

generating an equivalent price and an equivalent unit for each product of a plurality of demand groups using an equivalizing factor;

creating, using a processor, a sales model for each demand group and wherein the sales model for each demand group includes an imputed base price variable, the equivalent price, the equivalent unit and a promotional variable;

~~modeling sales as a function of price to create a sales model, wherein the sales model includes imputing base price variable and promotional variable;~~

modeling costs to create a cost model;

~~receiving cost model and sales model;~~

receiving manufacturer conditions from more than one manufacturer, wherein the manufacturer conditions are requirements the more than one manufacturer places on an offer, and the requirements include at least one promotional vehicle requirement;

receiving store constraints from at least one store, and wherein the store constraints from the at least one store includes a linear constraint and a nonlinear constraint;

computing a score that links each product with one promotional vehicle type for each offer of a ~~the~~ plurality of offers and for each promotional event of a ~~the~~ plurality of promotional events, wherein the computing the score independently computes a value of each offer and a value of each promotional event using the sales model and cost model ~~wherein each event include at least one type of promotional vehicle, and wherein each offer includes at least one promotional vehicle requirement~~, and wherein each promotional event includes at least one type of promotional vehicle;

selecting ~~a~~ combinations of offers from the plurality of offers, and promotional events from the plurality of promotional events to form a subset of offers and

promotional events, wherein the selection of the combination of offers and events is
based on the computed scores, the manufacturer conditions and store constraints;

reconciling the type of promotional vehicle associated with each promotional
event in the subset with the promotional vehicle requirements for each offer the offers
and events within in the subset of offers and events; and

constructing a promotion calendar utilizing the subset of offers and promotional
events, and reconciled type of promotional vehicle and promotional vehicle
requirements wherein the promotion calendar sets the promotion levels of each product.

29.   (Previously Cancelled)

30.   (Previously Cancelled)

31.   (Previously Presented) The computer-implemented method, as recited in claim
28, wherein the computing the score independently computes a value of each offer and
a value of each event, and wherein the computing the score also links each product with
one promotional vehicle type of the at least one promotional vehicle type.

32.   (Previously Presented) The computer-implemented method, as recited in claim
28, wherein selecting the combination of offers and events includes maximizing the sum
of the values of the offers and events within the subset of offers and events, while
adhering to the conditions from at least one manufacturer and the constraints from the
at least one store.

33.   (Previously Presented) The computer-implemented method, as recited in claim 28, wherein reconciling the type of promotional vehicle with the promotional vehicle requirements includes solving an integer problem.

34.   (Currently Amended) The computer-implemented method, as recited in claim 28, wherein constructing a promotion calendar includes ~~setting the promotion levels of each product and~~ computing the resulting profit over a promotional period.

35.   (Currently Amended) The computer-implemented method, as recited in claim 28, wherein the selection subset of offers and events includes the integer programming model with the following objective function and appropriate restrictions on the variables:

$$\sum_{t=1}^{T}\sum_{o} Value_o IO_{o,t} + \sum_{t=1}^{T}\sum_{e} Value_{e,t} IE_{e,t}$$

where,

t: a time indices;

O: a set of offers;

o: an offer in O;

E: a set of events;

e: an event in E;

T : total planning period in weeks;

$$IE_{e,t} \equiv \begin{cases} 1 \ if \ event \ e \ is \ scheduled \ to \ start \ in \ period \ t \\ 0 \ otherwise \end{cases} ; \text{and}$$

$$IO_{o,t} \equiv \begin{cases} 1 \ if \ offer \ o \ is \ accepted \ in \ period \ t \\ 0 \ otherwise \end{cases}.$$

36.   (Previously Presented) The computer-implemented method, as recited in claim 28, wherein the reconciliation includes the integer programming model with the following objective function and appropriate restrictions on the variables:

$$Maximize: \sum_{t=1}^{T} \left(\sum_{\substack{p,e:IE_{e,t}=1 \\ k \in DisplayLad(e)}} Score_p IDE_{p,e,t+k} + \sum_{\substack{p,e:IE_{e,t}=1 \\ k \in AdLag(e)}} Score_p IAE_{p,e,t+k} \right)$$

where,

t: time indices;

E: set of events;

e: event in E;

p: index for products belonging to a set of promoted products;

$$DisplayLag(e) \equiv \left\{ \begin{array}{l} the\ offsets\ from\ the\ start\ of\ the\ event\ during \\ which\ the\ products\ have\ to\ be\ on\ display \end{array} \right\};$$

$$AdLag(e) \equiv \left\{ \begin{array}{l} the\ offsets\ from\ the\ start\ of\ the\ event\ during \\ which\ the\ products\ have\ to\ be\ advertised. \end{array} \right\};$$

T : total planning period in weeks;

$$IE_{e,t} \equiv \left\{ \begin{array}{l} 1\ if\ event\ e\ is\ scheduled\ to\ start\ in\ period\ t \\ 0\ otherwise \end{array} \right.;$$

$$IDE_{p,e,r} \equiv \left\{ \begin{array}{l} 1\ \text{if product } p \text{ is on display in event } e \text{ in period } r \\ 0\ \text{otherwise} \end{array} \right.;$$

$$IAE_{p,e,r} \equiv \left\{ \begin{array}{l} 1\ \text{if product } p \text{ is advertised in event } e \text{ in time } r \\ 0\ \text{otherwise} \end{array} \right. ; \text{ and}$$

r: any period in the promotion interval.

37.   (Previously Presented) The system, as recited in claim 1, wherein the more than one manufacturer includes a plurality of manufacturers and wholesalers.

38.   (Previously Presented) The computer-implemented method as recited in claim 5, wherein the more than one manufacturer includes a plurality of manufacturers and wholesalers.

39.   (Previously Presented) The computer-implemented method as recited in claim 8, wherein the more than one manufacturer includes a plurality of manufacturers and wholesalers.

40.   (Previously Presented) The computer-implemented method as recited in claim 28, wherein the more than one manufacturer includes a plurality of manufacturers and wholesalers.

ALLOWANCE

The following is an Allowance in response to Applicant's Request for Continued

Examination and amendment filed August 20, 2009 and interviews held with Mr. Kang

Lim on September 2 and 12, 2009. Claims 1-3. 5, 8, 15, 28, and 34 are amended and 4

are canceled above, claims 6, 18, 29 and 30 being previously canceled. Currently

claims 1-3, 5, 7-17, 19-28 and 31-40 are pending and allowed below.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance.

The present invention is directed to computer-implemented method/system for

constructing a promotional calendar which sets the promotion levels for a plurality of

products (demand groups) for a plurality of stores based on optimizing manufacturer

promotional offer condition, store promotional event constraints and a computer score

valuing the various combinations for store promotional events and manufacturer

promotional offers.

The closest prior art Boyd et al, U.S. Patent no. 7,072,848, Dvorak, U.S. Patent

No. 7,155,402 and Silva-Risso et al., A Decision Support System for Planning

Manufacturers' Sales Promotion Calendars (1999) fail to teach or suggest either

singularly or in combination a computer-implement method or a computerized price

optimization system to create a promotional event calendar, in association with at least

one store, comprising: creating a sales model including imputing base price variable

and a promotional variable, generating an equivalent price and an equivalent unit for

each product of the plurality of demand groups using an equivalizing factor, and wherein

the sales model includes the imputed base price variable, the equivalent price, the

equivalent unit and the promotional variable; create a cost model; receive manufacturer

conditions from more than one manufacturer, wherein the manufacturer conditions are

requirements the more than one manufacturer places on an offer, and the requirements

include at least one promotional vehicle requirement; receive store constraints from at

least one store, and wherein the store constraints from the at least one store includes a

linear constraint and a nonlinear constraint; compute a score that links each product

with one promotional vehicle type for each offer of a plurality of offers and for each

promotional event of a plurality of promotional events, wherein the computing the score

independently computes a value of each offer and a value of each promotional event

using the sales model and cost model, and wherein each promotional event includes at

least one type of promotional vehicle; select combinations of offers from the plurality of

offers, and promotional events from the plurality of promotional events to form a subset

of offers and promotional events, wherein the selection of the combination of offers and

events is based on the computed scores, the manufacturer conditions and store

constraints; reconcile the type of promotional vehicle associated with each promotional

event in the subset with the promotional vehicle requirements for each offer in the

subset; and construct a promotion calendar utilizing the subset of offers and

promotional events, and reconciled type of promotional vehicle and promotional vehicle

requirements wherein the promotion calendar sets the promotion levels of each product

as recited in independent Claims 1, 5, 8 and 28.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Naik et al., Planning Media Schedules in the Presence of Dynamic Advertising Quality (1998), teaches constructing promotion calendar(s) (media scheduling models) but fails to teach or suggest scoring and/or selecting combinations of store promotional events and manufacturer promotional offers.

- Teel et al., A Media Planning Algorithm for Retail Advertisers (1980), teaches a method for generating promotion calendars/schedules in association with at least one store including selecting the promotional vehicles to be utilized as part of the plan fails to teach or suggest construction a promotion calendar comprising computing a score linking each product with one promotional vehicle type for each of a plurality of manufacturer promotional offers.

- Neslin et al., The Effects of Retailer and Consumer Response on Optimal Manufacturer Advertising and Trade Promotion Strategies (1995) teaches a method for constructing a manufacturers promotional calendar.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT L. JARRETT whose telephone number is (571)272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley Bayat can be reached on (571) 272-6704. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Scott L Jarrett/
Primary Examiner, Art Unit 3624